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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,301	02/08/2002	Eiji Hamamoto	020588	1113
38834	7590	05/04/2004	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			HON, SOW FUN	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,301

Applicant(s)

HAMAMOTO ET AL.

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/20/04 has been entered.

Withdrawn Rejections

2. The 35 U.S.C. 102(b) and 103(a) rejections in the previous Office action have been withdrawn due to the amendment filed 02/20/04.

New Rejections

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-5, 9-12, 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buzzell (previously cited US 3,531,351).

Buzzell teaches a process of producing a polarizing plate (composite light-polarizing material structure) (column 1, lines 10-20) comprising a polyvinyl alcohol-based polarizing film and a transparent protective film (transparent, cellulose acetate base) bonded to at least one surface of the polyvinyl alcohol-based polarizing film (laminated) (column 6, lines 10-15)

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(claims 1,4). The polyvinyl alcohol-based polarizing film contains a dichroic substance (dye) (column 1, lines 65-75) (claim 1). The polyvinyl alcohol polarizing film which contains the dye is modified to hold fast the dye (column 5, lines 55-65), hence the term "polyvinyl alcohol-based".

The adhesive layer is a preferred solution of polyvinyl alcohol in water (column 6, lines 1-5) (claim 2). A (i) crosslinking agent such as boric acid, capable of crosslinking a vinyl alcohol-based polymer (reacting with the alcoholic hydroxyls of the polyvinyl alcohol) (column 5, lines 40-50) (claim 3) and (ii) a catalyst such as hydrochloric acid (HCl) (column 6, lines 1-5) (claims 19-24) are added to the polyvinyl alcohol. Said boric acid crosslinking agent is water-soluble as defined by Applicant's specification (original claim 3). Buzzell teaches that the crosslinking agent helps maintain the dimensional stability of the polyvinyl alcohol against ambient humidity (column 5, lines 25-30). Therefore it would have been obvious to one of ordinary skill in the art to have incorporated the water-soluble crosslinking agent and catalyst into the water solution of polyvinyl alcohol as the adhesive layer to maintain the dimensional stability of the polarizing plate laminate (claim 1).

Although the concentration of crosslinking agent is not specified, it varies with the concentration of the polyvinyl alcohol to be crosslinked. Thus the amount of a solution containing at least 0.1 wt% (claim 9) and at least 10 wt % (claim 10) of the water-soluble crosslinking agent is the result of routine experimentation. Furthermore, although the thickness of the adhesive layer is not specified, a thickness of at least 0.02 microns (claim 12) and at most 0.5 microns (claim 11) is the result of routine experimentation.

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The transparent protective film is a triacetyl cellulose (triacetate) (column 6, lines 10-15) and has a saponified (hydrolyzed) surface for ease of adhesion (capacity) (column 4, lines 65-70) (claim 5).

5. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buzzell as applied to claims 1-5, 9-12, 19-24 above, and further in view of Shulman et al. (previously cited US 4,545,648).

Buzzell has been discussed above and teaches a polarizing plate comprising a polyvinyl alcohol-based polarizing film containing a dichroic substance and a transparent protective film bonded to at least one surface of the polyvinyl alcohol-based polarizing film through an adhesive layer, wherein it would have been obvious that the adhesive layer can comprise a water-soluble crosslinking agent capable of crosslinking a vinyl alcohol-based polymer, and a catalyst.

Buzzell fails to teach an additional optical layer on the polarizing plate (claim 6), which is other than a polarizing layer, and can be a reflective layer (claim 7), used in a liquid crystal display (claim 8).

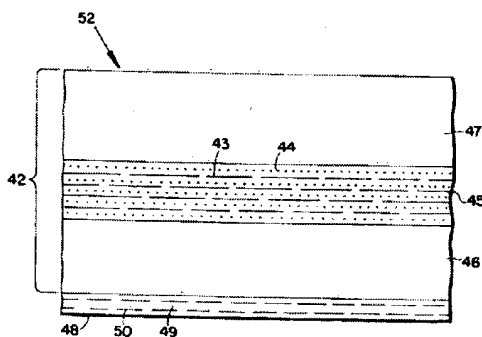


FIG 3

Shulman et al. has a polarizer element in a liquid crystal display (column 4, lines 1-45) which comprises an additional optical layer which is semitransparent reflective (transflector

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layer 48) on a polarizing plate (polarizer element 42) comprising a polyvinyl alcohol-based polarizing film 45 (containing an iodine-complex) and a transparent protective film bonded to at least one surface of the polyvinyl alcohol-based polarizing film 42 (transparent isotropic cellulose acetate plastic sheets 46 and 47) (column 7, lines 20-30). Water-soluble polyvinyl alcohol is the preferred adhesive (binder medium) (column 4, lines 35-40). Shulman et al. fails to teach that the water-soluble polyvinyl alcohol adhesive contains a water-soluble crosslinking agent capable of crosslinking a vinyl alcohol-based polymer, and the corresponding catalyst.

Buzzell teaches that the crosslinking agent helps maintain the dimensional stability of the polyvinyl alcohol against ambient humidity (column 5, lines 25-30).

Therefore it would have been obvious to one of ordinary skill in the art to have used the polarizing plate of Buzzell as a polarizing plate with a reflective layer in the liquid crystal display of Shulman et al., because the polarizing plate of Buzzell has greater dimensional stability against ambient humidity.

6. Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buzzell in view of Delangre et al. (previously cited US 3,015,989).

Buzzell teaches a process of producing a polarizing plate (composite light-polarizing material structure) (column 1, lines 10-20) comprising a polyvinyl alcohol-based polarizing film and a transparent protective film (transparent, cellulose acetate base) bonded to at least one surface of the polyvinyl alcohol-based polarizing film (laminated) (column 6, lines 10-15).

Buzzell teaches a process with the step of applying an adhesive layer (polyvinyl alcohol solution) (column 4, lines 60-65) to a polyvinyl alcohol-based polarizing film (molecularly

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oriented film 22) (column 4, lines 50-55) and a transparent protective film (cellulose acetate base) (column 4, lines 55-60), bonding the transparent protective film to the polarizing film.

With respect to claims 13, 16-18, Buzzell teaches that the crosslinking agent helps maintain the dimensional stability of the polyvinyl alcohol against ambient humidity (column 5, lines 25-30), aided by a catalyst such as hydrochloric acid (HCl) (column 6, lines 1-5).

Therefore it would have been obvious to one of ordinary skill in the art to have incorporated the water-soluble crosslinking agent and catalyst into the water solution of polyvinyl alcohol as the adhesive layer to maintain the dimensional stability of the polarizing plate laminate.

With respect to claims 13 and 15, Buzzell teaches the step of forming and crosslinking the polyvinyl alcohol-based polarizing film (mixture of polyvinyl alcohol, glyoxal crosslinking agent and hydrochloric acid catalyst) (column 6, lines 50-60) and dried (column 6, line 65), but fails to teach that the dichroic substance is added to the polarizing film prior to bonding it to the transparent protective film.

Delangre et al. teaches a polarizing film (column 1, lines 10-15), wherein the dichroic substance (benzaldehyde-4-trimethyl ammonium iodide) is added to the polyvinyl alcohol (column 6, lines 65-70) during the process of formation of the polarizing film, demonstrating that it would have been an obvious process variation to one of ordinary skill in the art, to have added the dichroic substance to the polyvinyl alcohol during the step of forming and crosslinking the polyvinyl alcohol-based polarizing film in the process of Buzzell.

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Response to Arguments

7. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SFH
Sow-Fun Hon
04/28/04

[Signature]
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

4/29/04